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09/256,411	02/24/1999	TAEKO TANAKA	1232-4512	9777

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EXAMINER
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ART UNIT	PAPER NUMBER
2612	

DATE MAILED: 01/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/256,411	TANAKA, TAEKO
	Examiner	Art Unit
	James M Hannett	2612

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _30 December 2003_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-14,16-18,20,21,23-25 and 27-29_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) _13,14,18,20,21 and 25_ is/are allowed.

6)☒ Claim(s) _1-12,16,17,23,24 and 27-29_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _24 February 1999_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

    a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.

4) ☐ Interview Summary (PTO-413) Paper No(s). _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

Response to Arguments

In response to applicant's arguments pertaining to Claims 16, 17, 23, 24 and 27-29

against the references individually, one cannot show nonobviousness by attacking references

individually where the rejections are based on combinations of references. See *In re Keller*, 642

F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375

(Fed. Cir. 1986).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

1: Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN

5,331,367 Kawasaki et al in view of US-PGPUB 2002/0109784 Suda et al.

2: As for Claim 1, Kawasaki et al teaches in the abstract an image sensing method.

Kawasaki et al teaches the use of a power zoom lens having a zoom mechanism. Kawasaki et al

teaches the use of a shutter mechanism for controlling the shutter speed of a camera which upon

changing the shutter speed changes the amount of time charge will be allowed to be accumulated

or stored on an image sensing element. Kawasaki et al teaches on Column 59, Lines 50-63 the

use of a control step of mid-exposure zooming in that a zooming speed is selected in accordance

with the exposure time or shutter speed.

Kawasaki et al does not teach the use of a camera that has a focusing step that performs a focusing operation during a zooming operation so that an in focus state can be achieved while zooming. Furthermore, Kawasaki et al does not teach the use of controlling to change a focus speed in the zooming step.

Suda et al teaches in the abstract the use of an image sensing apparatus in the form of a camera which can perform a zooming operation of a zoom lens while maintaining an in-focus state of a focus lens. Suda et al teaches on Paragraph [0002 and 0153] the use of signal detection means for extracting a high-frequency component from an image-sensing signal obtained by an image-sensing device such as a CCD, and detecting a sharpness signal. Suda et al teaches on Paragraph [0032] the use of signal extraction means for extracting a peak value of a luminance component in an image-sensing signal. Suda et al teaches in the abstract the use of evaluation value calculating means for averaging sharpness signals during a zooming operation to calculate a focus evaluation value. Suda et al teaches that the focus evaluation value is calculated in accordance with a plurality of focus detection means. Furthermore, Suda et al teaches on Paragraph [0028] the use of speed calculation means for determining a driving velocity of a focus lens in order to compensate the velocity of the focus lens for movement cause by the zooming operation of the zoom lens.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to enable the camera of Kawasaki et al to perform a zooming operation of a zoom lens while maintaining an in-focus state of a focus lens as taught by Suda et al in order to enable a user to view an in focus image while zooming, and to change the speed of a focusing

operation in order to compensate the velocity of the focus lens for movement cause by the zooming operation of the zoom lens.

3:      As for Claim 2, Kawasaki et al teaches on Column 59, Lines 50-63 the control step of mid-exposure zooming varies the zoom speed when the exposure time is longer than a predetermined time. Therefore, because shutter speed increases as exposure time decreases the process of controlling to decrease the zoom speed occurs when the shutter speed is not more than a predetermined value. Kawasaki et al teaches that the zoom speed is varied by adding a delay equal to one half of the exposure time. Therefore, decreasing the zoom speed when the shutter speed is not more than a predetermined value.

4:      As for Claim 3, Claim 3 is rejected for reasons discussed related to Claim 1, since Claim 1 is substantively equivalent to Claim 3.

5:      As for Claim 4, Claim 4 is rejected for reasons discussed related to Claim 2, since Claim 2 is substantively equivalent to Claim 4.

6:      In regards to Claim 5, Kawasaki et al teaches in the abstract an image sensing method. Kawasaki et al teaches the use of a power zoom lens having a zoom mechanism. Kawasaki et al teaches on Column 6, Lines 40-60 the use of a focus adjustment for correcting movement of a focus plane upon movement of a zoom lens by using a focus lens. Kawasaki et al teaches on Column 6, Lines 40-60 a driving step of independently moving a zoom lens and a focus lens parallel to an optical axis since the automatic focus lens and zooming lens are controlled by independent motors. Kawasaki et al teaches on Column 5, Lines10-14 the selection step of selecting a charge storage time or shutter speed on the basis of information including the photometric signal and film speed, of an image-sensing element. Kawasaki et al teaches the use

of a shutter mechanism for controlling the shutter speed of a camera which upon changing the

shutter speed changes the amount of time charge will be allowed to be accumulated or stored on

an image sensing element. Kawasaki et al teaches on Column 59, Lines 50-63 the use of a

control step of mid-exposure zooming in that a zooming speed is selected in accordance with the

exposure time or shutter speed.

Kawasaki et al does not teach the use of a camera that has a focusing step that performs a

focusing operation during a zooming operation so that an in focus state can be achieved while

zooming. Furthermore, Kawasaki et al does not teach the use of controlling to change a focus

speed in the zooming step.

Suda et al teaches in the abstract the use of an image sensing apparatus in the form of a

camera which can perform a zooming operation of a zoom lens while maintaining an in-focus

state of a focus lens. Suda et al teaches on Paragraph [0002 and 0153] the use of signal detection

means for extracting a high-frequency component from an image-sensing signal obtained by an

image-sensing device such as a CCD, and detecting a sharpness signal. Suda et al teaches on

Paragraph [0032] the use of signal extraction means for extracting a peak value of a luminance

component in an image-sensing signal. Suda et al teaches in the abstract the use of evaluation

value calculating means for averaging sharpness signals during a zooming operation to calculate

a focus evaluation value. Suda et al teaches that the focus evaluation value is calculated in

accordance with a plurality of focus detection means. Furthermore, Suda et al teaches on

Paragraph [0028] the use of speed calculation means for determining a driving velocity of a

focus lens in order to compensate the velocity of the focus lens for movement cause by the

zooming operation of the zoom lens.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to enable the camera of Kawasaki et al to perform a zooming operation of a zoom lens while maintaining an in-focus state of a focus lens as taught by Suda et al in order to enable a user to view an in focus image while zooming and to change the speed of a focusing operation in order to compensate the velocity of the focus lens for movement cause by the zooming operation of the zoom lens.

7:    In regards to Claim 6, Kawasaki et al teaches on Column 59, Lines 50-63 the control step of mid-exposure zooming varies the zoom speed when the exposure time is longer than a predetermined time. Therefore, because shutter speed increases as exposure time decreases the process of controlling to decrease the zoom speed occurs when the shutter speed is not more than a predetermined value. Kawasaki et al teaches that the zoom speed is varied by adding a delay equal to one half of the exposure time. Therefore, decreasing the zoom speed when the shutter speed is not more than a predetermined value.

8:    As for Claim 7, Claim 7 is rejected for reasons discussed related to Claim 5, since Claim 5 is substantively equivalent to Claim 7.

9:    As for Claim 8, Claim 8 is rejected for reasons discussed related to Claim 6, since Claim 6 is substantively equivalent to Claim 8.

10:    As for Claim 9, Claim 9 is rejected for reasons discussed related to Claim 1, since Claim 1 is substantively equivalent to Claim 9.

11:    As for Claim 10, Claim 10 is rejected for reasons discussed related to Claim 2, since Claim 2 is substantively equivalent to Claim 10.

12:    As for Claim 11, Claim 11 is rejected for reasons discussed related to Claim 5, since

Claim 5 is substantively equivalent to Claim 11.

13:    As for Claim 12, Claim 12 is rejected for reasons discussed related to Claim 6, since

Claim 6 is substantively equivalent to Claim 12.

14:   Claims 16, 17, 23, 24, and 27-29 are rejected under 35 U.S.C. 103(a) as being

unpatentable over US-PGPUB 2002/0109784 Suda et al in view of USPN 5,587,737 Sekine et al.

15:    In regards to Claim 16, Suda et al teaches in the abstract the use of an image sensing

apparatus in the form of a camera which can perform a zooming operation of a zoom lens while

maintaining an in-focus state of a focus lens. Suda et al teaches on Paragraph [0002 and 0153]

the use of signal detection means for extracting a high-frequency component from an image-

sensing signal obtained by an image-sensing device such as a CCD, and detecting a sharpness

signal. Suda et al teaches on Paragraph [0032] the use of signal extraction means for extracting a

peak value of a luminance component in an image-sensing signal. Suda et al teaches in the

abstract the use of evaluation value calculating means for averaging sharpness signals during a

zooming operation to calculate a focus evaluation value. Suda et al teaches that the focus

evaluation value is calculated in accordance with a plurality of focus detection means.

Suda et al does not teach the use of changing the time duration in which the sharpness

signals are averaged during the zooming operation in accordance with an object illuminance

obtained from the luminance signal.

Sekine et al teaches on Column 2, Lines 10-17 that if an object has a low luminance

signal, a long exposure time is set to obtain a sufficiently high signal to noise ratio. Sekine et al

teaches on Column 7, Lines 35-40 that the sampling frequency of the shake detection mean or

the time duration in which the sharpness signals are averaged is equal to the accumulation time

of the image pickup means. Therefore, when the camera detects an object that has a low

luminance signal, the exposure time for the camera would be increased to obtain a sufficiently

high signal to noise ratio and therefore, the time duration over which the sharpness signals are

averaged would be changed in accordance with the illuminance obtained from the luminance

signal.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to enable the camera of Suda et al with the luminance detection and

correction means of Sekine et al in order to obtain a sufficiently high signal to noise ratio when

the object in the field of view has a low luminance signal.

16:     As for Claim 17, Sekine et al teaches on Column 2, Lines 10-17 that if an object has a

low luminance signal, a long exposure time is set to obtain a sufficiently high signal to noise

ratio. Sekine et al teaches on Column 7, Lines 35-40 that the sampling frequency of the shake

detection mean or the time duration in which the sharpness signals are averaged is equal to the

accumulation time of the image pickup means. Therefore, when the camera detects an object that

has a low luminance signal, the exposure time for the camera would be increased to obtain a

sufficiently high signal to noise ratio and therefore, the averaging time of the sharpness signals is

shortened when the luminance signal is high and lengthened when the luminance signal is low.

17:     In regards to Claim 23, Suda et al teaches in the abstract the use of an image sensing

apparatus in the form of a camera which can perform a zooming operation of a zoom lens of a

first lens group while maintaining an in-focus state of a focus lens of a second lens group. Suda

et al teaches on Paragraph [0002 and 0153] the use of signal detection means for extracting a

high-frequency component from an image-sensing signal obtained by an image-sensing device

such as a CCD, and detecting a sharpness signal. Suda et al teaches on Paragraph [0032] the use

of signal extraction means for extracting a peak value of a luminance component in an image-

sensing signal. Suda et al teaches in Paragraph [0028] the use of memory means for storing data

representing a positional relationship between the zoom lens and the focus lens. Suda et al

teaches in Paragraph [0028] the use of speed calculation means for determining a driving

velocity of the focus lens on the basis of information stored in the memory. Suda et al further

teaches the use of speed addition means for adding a compensating velocity to the velocity of the

focus lens in order to compensate for a movement of a focus plane caused by the zooming

operation of a zoom lens on the basis of the data in memory. Suda et al further teaches that the

correction speed to be added to the standard moving speed of the focus lens is calculated on the

basis of the focus signal or the magnitude of the focus evaluation value. Suda et al teaches in the

abstract the use of focus control means for averaging sharpness signals during a zooming

operation to calculate a focus evaluation value. Suda et al teaches that the focus evaluation value

is calculated in accordance with a plurality of focus detection means.

Suda et al does not teach the use of changing the time duration in which the sharpness

signals are averaged during the zooming operation in accordance with an object illuminance

obtained from the luminance signal.

Sekine et al teaches on Column 2, Lines 10-17 that if an object has a low luminance

signal, a long exposure time is set to obtain a sufficiently high signal to noise ratio. Sekine et al

teaches on Column 7, Lines 35-40 that the sampling frequency of the shake detection mean or

the time duration in which the sharpness signals are averaged is equal to the accumulation time

of the image pickup means. Therefore, when the camera detects an object that has a low
luminance signal, the exposure time for the camera would be increased to obtain a sufficiently
high signal to noise ratio and therefore, the time duration over which the sharpness signals are
averaged would be changed in accordance with the illuminance obtained from the luminance
signal.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the
invention was made to enable the camera of Suda et al with the luminance detection and
correction means of Sekine et al in order to obtain a sufficiently high signal to noise ratio when
the object in the field of view has a low luminance signal.

18:     As for Claim 24, Sekine et al teaches on Column 2, Lines 10-17 that if an object has a
low luminance signal, a long exposure time is set to obtain a sufficiently high signal to noise
ratio. Sekine et al teaches on Column 7, Lines 35-40 that the sampling frequency of the shake
detection mean or the time duration in which the sharpness signals are averaged is equal to the
accumulation time of the image pickup means. Therefore, when the camera detects an object that
has a low luminance signal, the exposure time for the camera would be increased to obtain a
sufficiently high signal to noise ratio and therefore, the averaging time of the sharpness signals is
shortened when the luminance signal is high and lengthened when the luminance signal is low.

19:     As for Claim 27, Suda et al teaches in the abstract the use of an image sensing control
method in the form of a camera which can perform a zooming operation of a zoom lens of a first
lens group while maintaining an in-focus state of a focus lens of a second lens group. Suda et al
teaches the use of averaging sharpness signals corresponding to a predetermined time. Suda et al
teaches on Paragraph [0002 and 0153] the use of signal detection means for extracting a high-

frequency component from an image-sensing signal obtained by an image-sensing device such as

a CCD, and detecting a sharpness signal. Suda et al teaches on Paragraph [0028] the use of

control means for checking the in-focus state of the camera on the basis of the focus signal and

determining a driving velocity of the focus lens based on the focus signal.

Suda et al does not teach the use of changing the time duration in which the sharpness

signals are averaged during the zooming operation in accordance with the speed of the zoom

operation

Sekine et al teaches on Column 2, Lines 10-17 that if an object appears to be moving at a

high speed is to be photographed, a high-speed shutter mode is set to prevent blurring of the edge

of the object image. Sekine et al teaches on Column 7, Lines 35-40 that the sampling frequency

of the shake detection mean or the time duration in which the sharpness signals are averaged is

equal to the accumulation time of the image pickup means. Therefore, when the camera detects

an object that appears to be moving at a high speed as a result of the camera zoom operation, the

exposure time for the camera would be decreased to prevent blurring and therefore, the time

duration which the sharpness signals are averaged would be changed in accordance with the

speed of the zoom operation.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to enable the camera of Suda et al with the movement detection and

correction means of Sekine et al in order to prevent blurring of an image when the object in the

field of view appears to be moving at a high rate of speed due to the movement of the camera

zoom lens.

20:      As for Claim 28, Suda et al teaches in the abstract the use of an image sensing control

method in the form of a camera which can perform a zooming operation of a zoom lens of a first

lens group while maintaining an in-focus state of a focus lens of a second lens group. Suda et al

teaches the use of averaging sharpness signals corresponding to a predetermined time. Suda et al

teaches on Paragraph [0002 and 0153] the use of signal detection means for extracting a high-

frequency component from an image-sensing signal obtained by an image-sensing device such as

a CCD, and detecting a sharpness signal. Suda et al teaches on Paragraph [0028] the use of

control means for checking the in-focus state of the camera on the basis of the focus signal and

determining a driving velocity of the focus lens based on the focus signal.

Suda et al does not teach the use of changing the time duration in which the sharpness

signals are averaged during the zooming operation in accordance with an object illuminance

obtained from a luminance signal in the video signal obtained by photographing an object.

Sekine et al teaches on Column 2, Lines 10-17 that if an object has a low luminance

signal, a long exposure time is set to obtain a sufficiently high signal to noise ratio. Sekine et al

teaches on Column 7, Lines 35-40 that the sampling frequency of the shake detection mean or

the time duration in which the sharpness signals are averaged is equal to the accumulation time

of the image pickup means. Therefore, when the camera detects an object that has a low

luminance signal, the exposure time for the camera would be increased to obtain a sufficiently

high signal to noise ratio and therefore, the time duration over which the sharpness signals are

averaged would be changed in accordance with the illuminance obtained from the luminance

signal.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to enable the camera of Suda et al with the luminance detection and

correction means of Sekine et al in order to obtain a sufficiently high signal to noise ratio when

the object in the field of view has a low luminance signal.

21:     As for Claim 29, Suda et al teaches in the abstract the use of an image sensing control

method in the form of a camera which can perform a zooming operation of a zoom lens of a first

lens group while maintaining an in-focus state of a focus lens of a second lens group. Suda et al

teaches the use of averaging sharpness signals corresponding to a predetermined time. Suda et al

teaches on Paragraph [0002 and 0153] the use of signal detection means for extracting a high-

frequency component from an image-sensing signal obtained by an image-sensing device such as

a CCD, and detecting a sharpness signal. Suda et al teaches on Paragraph [0028] the use of

control means for checking the in-focus state of the camera on the basis of the focus signal and

determining a driving velocity of the focus lens based on the focus signal.

Suda et al does not teach the use of changing the time duration in which the sharpness

signals are averaged during the zooming operation in accordance with the information from a

shake detection means for detecting a shake of an image sensing apparatus.

Sekine et al teaches on Column 2, Lines 10-17 that if an object appears to be moving at a

high speed is to be photographed, a high-speed shutter mode is set to prevent blurring of the edge

of the object image. Sekine et al teaches on Column 7, Lines 35-40 that the sampling frequency

of the shake detection mean or the time duration in which the sharpness signals are averaged is

equal to the accumulation time of the image pickup means. Therefore, when the camera detects

an object that appears to be moving at a high speed as a result of the camera shaking, the

exposure time for the camera would be decreased to prevent blurring and therefore, the time

duration which the sharpness signals are averaged would be changed in accordance with the

movement detected by the shake detection means.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to enable the camera of Suda et al with the shake detection and correction

means of Sekine et al in order to prevent blurring of an image when the object in the field of

view appears to be moving at a high rate of speed due to the movement of the camera.

Allowable Subject Matter

22:   Claims 13, 14, 18, 20, 21, and 25 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not teach the method wherein the evaluation value calculation device includes

an averaging time table set in correspondence with various zoom speeds, determines the various

zoom speeds by referring to the averaging time, and calculates the focus evaluation value.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to James M Hannett whose telephone number is 703-305-7880. The

examiner can normally be reached on 8:00 am to 5:00 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Wendy Garber can be reached on 703-305-4929. The fax phone numbers for the

organization where this application or proceeding is assigned are 703-872-9314 for regular

communications and 703-842-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to customer service whose telephone number is 703-308-6789.

James Hannett
Examiner
Art Unit 2612

JMH
January 19, 2004

NGOC-YEN VU
PRIMARY EXAMINER